

CONTRIBUTIONS FROM THE GRAY HERBARIUM OF
HARVARD UNIVERSITY—NO. CXLVIII

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*(Continued from page 258)*V. STUDIES IN NORTH AMERICAN SPECIES OF
SCIRPUS

(Plates 762–767)

THE AMERICAN REPRESENTATIVE OF *SCIRPUS PUMILUS* (PLATES 762–764).—One of the rarest or most localized sedges of North America is the tiny plant with solitary terminal spikelet, belonging in *Scirpus*, § *Baeothryon* and passing for nearly forty years in America as the Eurasian *S. alpinus* Schleicher (1828) and subsequently as the identical *S. pumilus* Vahl (1806). First recorded as American by Britton in *Trans. N. Y. Acad. Sci.* xi. 75 (1892) as *S. alpinus* from the “Rocky Mountains”, *Hall & Harbour*, and from Moreley in the Canadian Rocky Mountains, the species next attracted attention from its discovery on Anticosti Island and the adjacent Mingan Islands of Saguenay County, Quebec, and was the subject of one of the interesting articles by Marie-Victorin, in *Trans. Roy. Soc. Can.*, ser. 3, xxiii. pt. 2, sect. V. 25 (1929). Somewhat later, in *RHODORA*, xxxiii. 23, 24 (1931), I pointed out that the name *S. pumilus* Vahl antedates *S. alpinus* Schleicher and I then recorded additional stations in the Canadian Rocky Mountains; and more recently Beetle, in *Am. Journ. Bot.* xxviii. 421 (1941), has maintained *S. pumilus* as American: “Mountain meadows of Eurasia and North America”, he citing American plants of Quebec (Anticosti and the Mingan Islands), Saskatoon, Saskatchewan, Alberta and Colorado. The habitat, “mountain meadows”, while perhaps applying in the Rocky Mountains, is hardly appropriate for the Quebec area, with Anticosti rarely attaining a height of 175 m.¹ and the Mingan

¹ “les plus hautes plateaux cités par eux ne dépassent pas 150 et 175 metres”—*Despêcher and Combes* as quoted by Schmidt, *Monographie de l’Ile d’Anticosti*, 10 (1904).

Another member of § *Baeothryon*, the flat-leaved woodland *Scirpus planifolius* Muhl., is cited by Beetle, l. c. 174, from “VERMONT: Willoughby, *W. Boott* in 1863”. William Boott’s herbarium is incorporated in the Gray Herbarium. There is there no Vermont material of *S. planifolius* from him, and Kennedy and others who intimately knew the Willoughby region did not know it there. Dole lists it only from

Islands still lower, while Saskatoon is well to the east of the mountains, in the flat Canadian prairie.

Ever since Britton's identification of the Rocky Mountain plant with *S. alpinus* Schleicher or *S. pumilus* Vahl of central and southeastern Europe, eastward into Persia and central Asia, we have accepted the identification without question. The plants of Eurasia are at least two quite different species, or perhaps geographic varieties, while some of the Asiatic material, that of alpine regions (4305–5200 m.) of Tibet may be distinct. This Tibetan plant may well be *Isolepis oligantha* C. A. Meyer, *Mém. des Sav. Étrang. Pétersb.* i. 197, t. 1 (1831); but until some one who has more adequate material and who can study Meyer's Siberian type can check it, the Tibetan plant may wait.

True *Scirpus pumilus* of the alpine regions of south-central and -eastern Europe, thence into Persia and Siberia (our PLATE 762) is subcespitose or quite densely cespitose (as shown by Reichenbach and others), with short stoloniferous offsets which promptly send up erect tufts of culms; the lowest scale of the spikelet often has the green midrib prolonged (FIGS. 3 and 4) as a green and blunt mucro; the anthers (FIGS. 2 and 3) have the connective prolonged as a distinct subulus; the achenes (FIGS. 6–8) are rather slenderly ellipsoid-obovoid, 1.6–1.8 mm. long, 0.4–0.5 mm. broad, subequilaterally trigonous (FIGS. 6 and 9) and usually broadly rounded to truncate at the sessile base; while all but the lowermost scales of the spikelet have thin scarious margins.

Fully 2100 km. to the north, within the Arctic Circle, there is a plant, occurring on Porsanger Fjord (south of Cape North) in northernmost Norway which is identified in current Scandinavian floras as *Scirpus pumilus*. This plant (PLATE 763, FIGS. 1–5) is extensively creeping, with very elongate filiform rhizomes and with small and scattered tufts of culms. Its anthers (FIG. 2) and achenes (FIG. 4) are like those of *S. pumilus*, except that the achenes are longer (2–2.2 mm. long); but its scales are much

two Vermont stations, Mt. Philo (Addison County) and North Pownal (Bennington County). It has also been collected in Arlington, Bennington County. These known stations are along the warm southwestern border of Vermont, not, like Willoughby, near the northeastern corner. It is probable that the Willoughby record of *S. planifolius* arose from *S. pauciflorus* Lightf., now usually treated as *Eleocharis pauciflora* (Lightf.) Link (var. *Fernaldii* Svenson) which abounds at Willoughby and was there collected by Wm. Boott in 1863.

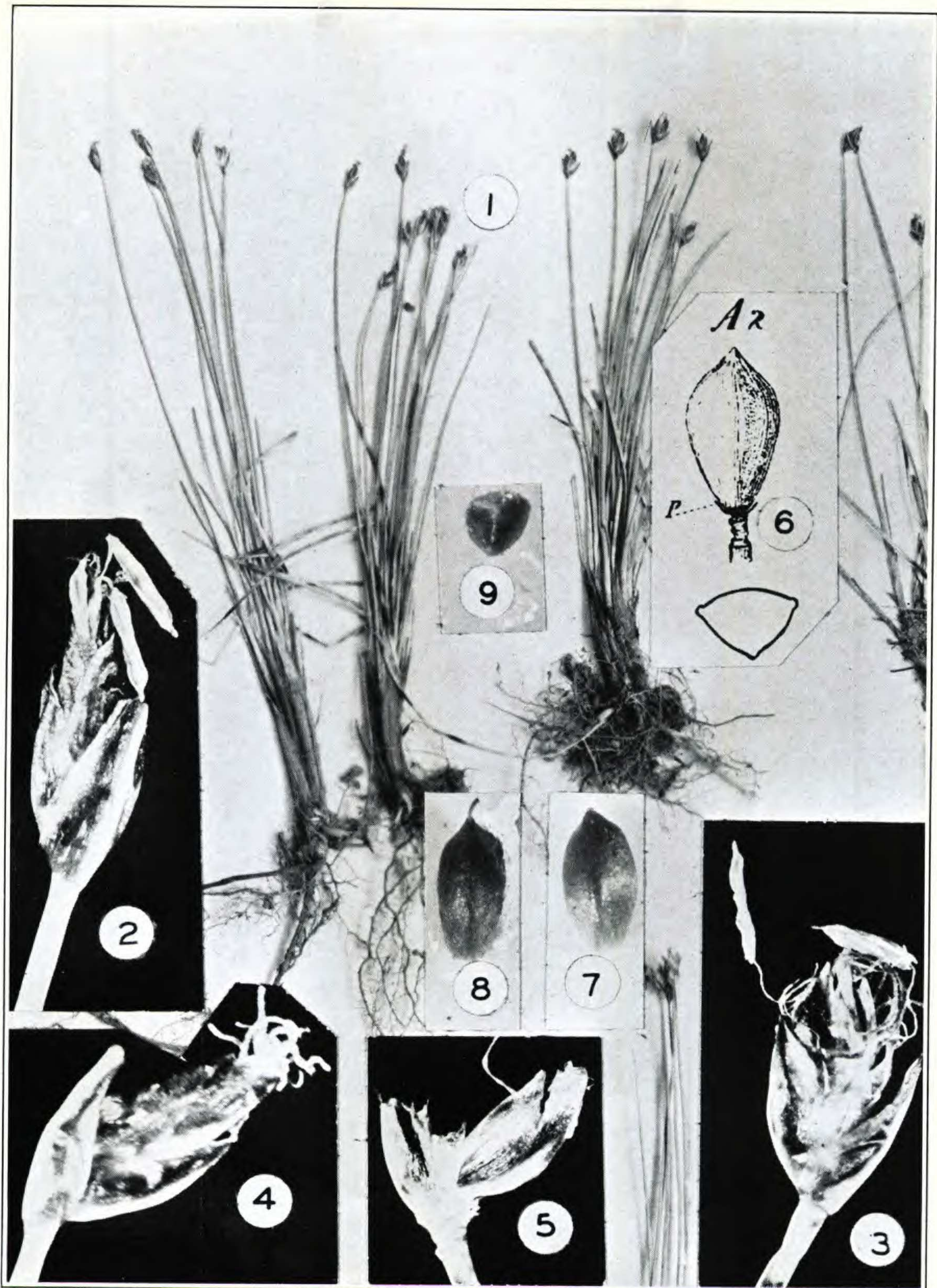


Photo. B. G. Schubert.

SCIRPUS PUMILUS: FIG. 1, habit, $\times 1$; FIGS. 2-4, spikelet, $\times 4$; FIG. 5, disintegrated spikelet, showing broad scarious margin of scale, $\times 10$; FIG. 6, achene and its cross-section, after *Schroeter*; FIGS. 7 and 8, achenes, $\times 10$; FIG. 9, looking down upon summit of achene, $\times 10$.

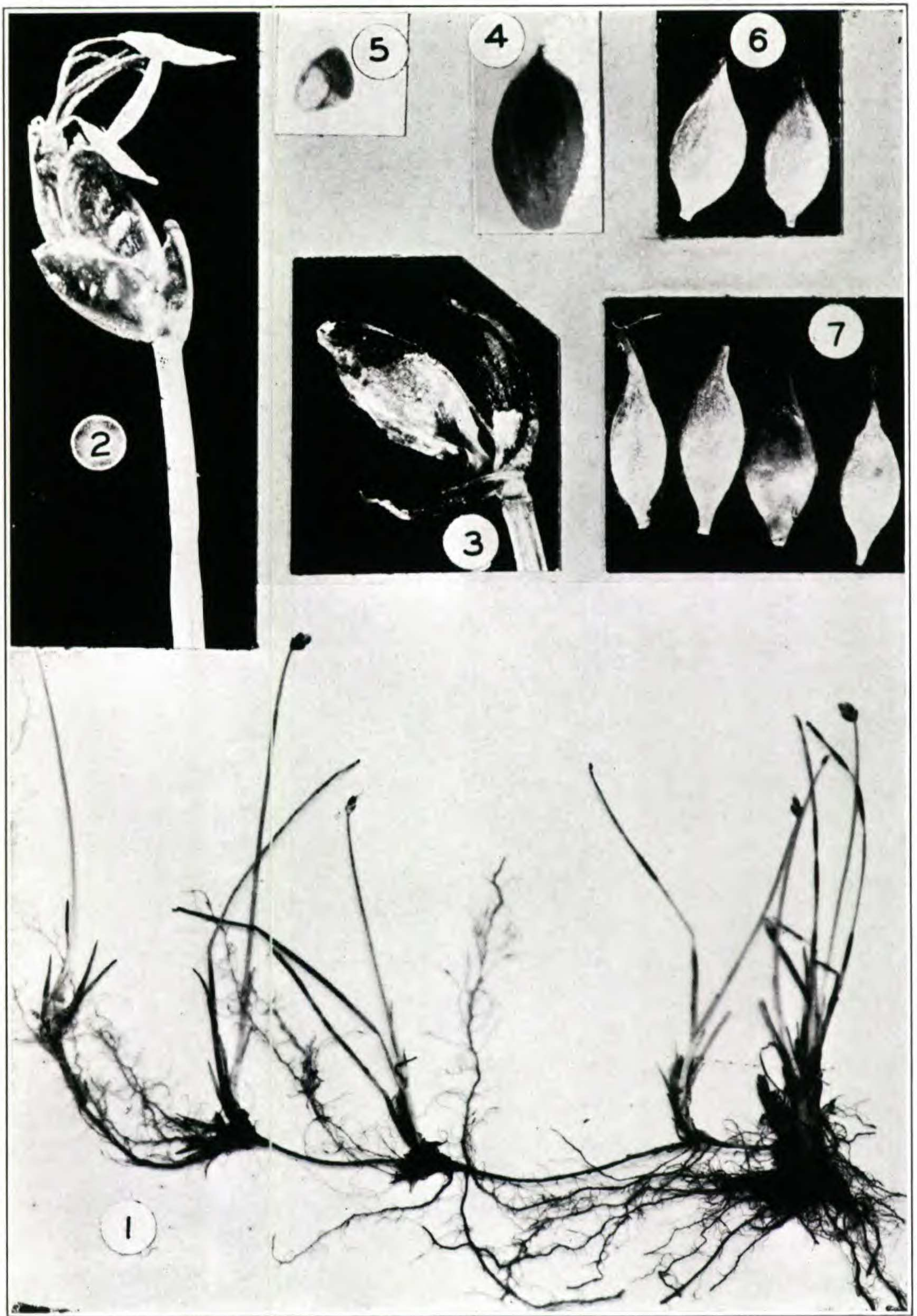


Photo. B. G. Schubert.

SCIRPUS EMERGENS: FIG. 1, topotype, $\times 1$; FIG. 2, spikelet, $\times 10$, FIG. 3, disintegrated spikelet, showing firm scales, $\times 10$; FIG. 4, achene, $\times 10$; FIG. 5, looking down upon summit of achene, $\times 10$.

S. RUFUS: FIG. 6, achenes, $\times 10$.

S. RUFUS, var. NEOGAEUS: achenes, $\times 10$.

firmer and broader than in true *S. pumilus* and the latter have the margins hardly if at all scarious (FIG. 3). Furthermore the lowest scale (FIG. 2) is nearly like the others, without the green mucro strongly excurrent. Differing so markedly from typical *S. pumilus*, it was beautifully described as *Trichophorum emergens* Norman in Soc. Reg. Sc. Norveg. v. 319—repr. as Spec. Loc. Nat. 79 (1868)—and as abundant on the sandy inundated shore in Porsangria. “Vaginae basillares culmi ut in *Trichophoro caespitoso*, a quo rhizomate repente, stolonifero, fasciculos pauciculmeos immo culmos solitarios huc illuc emittente, recedit. Sub accessu maris inundatur, sub recessu emergit”. So different is this Finmark plant of inundated tidal shores from the more cespitose one of the southern alpine areas that it should certainly be kept apart.¹ Even the original editors of *Index Kewensis*, who did not hesitate to reduce species they did not understand, were baffled by *Trichophorum emergens*, appending after the citation “(Quid?)—Norveg.”

As stated and as shown in the plates, the anthers in the Eurasian *Scirpus pumilus* and *S. emergens* have prominently excurrent connectives and the achenes are subequilaterally trigonous, while in *S. pumilus* the lowest scale often has the midrib excurrent as a mucro; and the blunt scales of the arctic tidal-shore *S. emergens* are subcoriaceous and scarcely scarious-margined. When we turn to the North American plant (PLATE 764) which has passed as *S. pumilus* we find a habit midway between those of the two European species, the culms tufted, sometimes without but usually with slender and elongate rhizomes and scaly stolons. The American plant on superficial examination might easily be thought to stand somewhat intermediate between those of Eurasia. In our plant the scales of the spikelet are as thin as in *S. pumilus* but the lowest (FIGS. 2 and 3) has the midrib included, not exserted; the anthers (FIGS. 2 and 4) merely taper to tip, with the connective not exserted; and the achene (FIGS. 5–10) is plano-convex, broad and flat on the inner face, gently arching to merely umbonate on the back. The ripe achenes (FIGS. 5–7) are broadly ellipsoid-oblong, only 1.2–1.5 mm. long but 0.8–1.2 mm. broad, and gradually rounded to

¹ *SCIRPUS emergens* (Norman), comb. nov. *Trichophorum emergens* Norman in Soc. Reg. Sc. Norveg. v. 319—repr. as Spec. Loc. Nat. 79 (1868). PLATE 763, figs. 1–5.

base or sometimes substipitate. Differing in these minute but morphologically important characters from the Eurasian series, the North American plant is clearly an endemic species. Our fullest representation is the abundant series from Anticosti and the Mingan Islands, collected by Bros. Marie-Victorin and Rolland-Germain. I am greatly pleased to have this opportunity to associate with a plant of that area the name of a modest and self-effacing botanist who has done much in his earnest and discriminating way to bring to our knowledge the rarer plants of Quebec, Brother Rolland-Germain.

SCIRPUS (§ **BAEOTHRYON**) **Rollandii**, sp. nov. (TAB. 764). *Planta habitu foliis culmisque ut in Scirpo pumilo sed valde stolonifera; culmis laxe cespitosis vel subsolitariis; spiculis ellipsoideo-ovoideis 3-4 mm. longis, subteretibus; squamis ovatis obtusis vel subacutis brunneis vel rufescentibus subcoriaceis margine scariosis; antheris 1.5 mm. longis apice attenuatis; achaeniis nigrescentibus late oblongo-ellipticis, 1.2-1.5 mm. longis 0.8-1.2 mm. latis, plano-convexis dorso leviter convexo vel umbinato.*—**QUEBEC**: Archipel de Mingan: rivages calcaires, Ile Sainte-Geneviève, 9 août, 1925, *Victorin & Rolland*, no. 20,220; corniches calcaires du côté du large, Ile Sainte-Geneviève, 22 juillet, 1926, *Victorin & Rolland*, no. 25,785 (TYPE in Herb. Gray.); rivages calcaires, Ile à Marteau, 23 juillet, 1926, *Victorin & Rolland*, no. 25,940; parties élevées et découvertes surtout dans les sentiers de renard, Grande Ile à la Vache Marine, 19 juillet, 1926, *Victorin & Rolland*, no. 25,782; tundra calcaire parmi les Ericacées et les *Salix* nains, Grande Ile à la Vache Marine, 3 août, 1928, *Victorin & Rolland*, no. 28,374. **Anticosti**: sur les platières argilo-calcaires au-dessus des gorges, Rivière Chicotte, 15 août, 1925, *Victorin & Rolland*, no. 25,783; sur les platières à plusieurs milles en haut des gorges, Rivière Chicotte, 24 juillet, 1927, *Victorin & Rolland*, no. 27,517; sur les platières avec divers *Antennaria*, 19 août, 1926, *Victorin & Rolland*, no. 25,784; sur les platières en haut des gorges, Rivière au Fusil, 20 juillet, 1927, *Victorin & Rolland*, no. 27,518; sur les platières près de la mer, 25 juillet, 1927, *Victorin & Rolland*, no. 27,516; éboulis argilo-calcaire, le long de la mer, à l'est de la rivière, Rivière la Loutre, 6 août, 1926, *Victorin & Rolland*, no. 25,781. **SASKATCHEWAN**: depressed alkaline bog, Sutherland, Saskatoon, June 1, 1938, and July 24, 1939, *W. P. Fraser*. **ALBERTA**: marsh, Devil's Lake, alt. 4600 ft., Banff, July 5, 1907, *Butters & Holway*, no. 50. **COLORADO**: "Rocky Mt. Alpine Flora, Lat. 39°-41°", 1862, *Hall & Harbour*, no. 583.

PLATE 762 shows details of *SCIRPUS PUMILUS* Vahl: FIG. 1, habit, $\times 1$, from Prov. Semipalavitinsk, western Siberia, May 21, 1920, *O. Simonova &*

T. Batueva; FIG. 2, spikelet, $\times 10$, from same collection; FIG. 3, spikelet, $\times 10$, from Mont Cenis, Savoie, July 27, 1855, *Perrier*; FIG. 4, spikelet, $\times 10$, from *Simonova & Batueva*; FIG. 5, disintegrated spikelet, showing broad scarious margin of scale, $\times 10$, from Zermatt, July, 1882, *Christ*; FIG. 6, achene and its cross-section, after *Schroeter*, Pflanzenl. der Alpen, fig. 174 (1923); FIG. 7, achene, $\times 10$, from Mont Cenis, *Perrier*; FIG. 8, achene, $\times 10$, from Zermatt, *Christ*; FIG. 9, looking down on summit of achene, $\times 10$, from Zermatt, *Christ*.

PLATE 763, FIGS. 1-5. *S. EMERGENS* (Norman) Fernald: FIG. 1, habit, $\times 1$, from Porsanger Fjord, Finmark, July 9, 1898, *A. L.*; FIG. 2, spikelet, $\times 10$, from same collection; FIG. 3, disintegrated spikelet, showing firm scales, $\times 10$, from Borself, Porsanger, August 15, 1899, *Ove Dahl*; FIG. 4, achene, $\times 10$, from *Dahl*; FIG. 5, looking down on tip of achene, $\times 10$, from *Dahl*. FIG. 6, *S. rufus* (Huds.) Schrad.: achenes, $\times 10$, from Skåne, Sweden, July 14, 1928, *Erik Asplund*. FIG. 7, *S. rufus*, var. *neogaeus*: achenes, $\times 10$, from the TYPE.

PLATE 764, *S. ROLLANDII* Fernald: FIG. 1, habit, $\times 1$, from the TYPE; FIGS. 2 and 3, spikelets, $\times 10$, from TYPE; FIG. 4, disintegrated spikelet, showing anthers, $\times 10$, from TYPE; FIG. 5, achene, $\times 10$, from Ile à la Vache Marine, Archipel de Mingan, Quebec, *Victorin & Rolland*, no. 28,374; FIG. 6, achene, $\times 10$, from Rivière Chicotte, Anticosti, *Victorin & Rolland*, no. 27,517; FIG. 7, achene, $\times 10$, from Saskatoon, Saskatchewan, July 24, 1939, *W. P. Fraser*; FIG. 8, looking down on tip of achene in fig. 5, $\times 10$; FIG. 9, similar view, $\times 10$, of achene in fig. 6; fig. 10, similar view, $\times 10$, of achene in FIG. 7.

SOME NORTH AMERICAN MEMBERS OF *SCIRPUS*, § *LACUSTRES* (PLATES 765 and 766).—

SCIRPUS VALIDUS Vahl, var. **creber**, var. nov. (TAB. 765, FIG. 4-7), spiculis ovoideis 5-9 mm. longis; squamis costa margineque exceptis glabris lucidis achaenio maturo vix superantibus; antheris deinde subulato-appendiculatis; perianthio achaenium subaequante; achaeniis 1.7-2.5 mm. longis 1.3-1.5 mm. latis.—Newfoundland to British Columbia, south to Nova Scotia, New England, Long Island, Georgia, Tennessee, Missouri, Oklahoma, Texas, New Mexico, northern Mexico and California. TYPE: salt-marsh, Fisher's Island, New York, August 10-15, 1920, *Harold St. John*, no. 2581 (in Herb. Gray.).

Forma **megastachyus**, f. nov. (TAB. 765, FIG. 8), spiculis lineari-cylindricis 9-15 mm. longis; achaeniis 2.3-2.8 mm. longis 1.4-1.8 mm. latis.—Scattered through the range of var. *creber*; the following are characteristic. NOVA SCOTIA: Truro, *Fernald & Wiegand*, no. 2720. MAINE: Lincolnville, *G. B. Rossbach*, no. 238. MASSACHUSETTS: York Pond, Canton, July 8, 1894, *Kennedy*; Eastham, *F. S. Collins*, no. 1293; Wakeby Pond, Sandwich, September 16, 1916, *Harger & Woodward*. CONNECTICUT: East Windsor, August 21, 1904, *Bissell*. VIRGINIA: west of Toano, James City County, *R. W. Menzel*, no. 89. MICHIGAN: New Buffalo, *Lansing*, no. 3281. IOWA: Lost Lake Township, Clay County, *Ada Hayden*, no. 9195. NORTH DAKOTA: Mandan, *F. P. Metcalf*, no. 374. NEBRASKA: St. Paul, July 24, 1909, *J. M. Bates*. KANSAS: Joy Creek, Osborne County, July 11, 1894,

Shear, no. 239 (TYPE in Herb. Gray.); Riley Co., June 21, 1895, *J. B. Norton*. TEXAS: Dallas Co., July, 1877, *Reverchon*; El Paso County, *Cory*, no. 1255. ALBERTA: Cree (Mamawi) Creek, Wood Buffalo Park, *Raup*, no. 1980. OREGON: St. Paul, *J. C. Nelson*, no. 1692; Salem, *Nelson*, no. 3307.

Scirpus validus (PLATE 765, FIGS. 1-3) was described by Vahl, Enum. ii. 268 (1806), its "*Habitat in Caribaeis*", with a clear diagnosis and a remarkably complete description, he distinctly saying "squamis dorso villosis". It is the plant of eastern tropical America¹ which differs at once from the common plant of the United States and Canada in several points. Its inflorescence (FIG. 1) is usually stiffer than in the common North American plant, only exceptionally with arching and pendulous rays and pedicels, although the more northern plant may have the inflorescence as stiff as in *S. acutus* Muhl. Typical *S. validus* may, as originally described, have the scales of the spikelets villous or they may be glabrescent or even glabrous except for the keel and the fimbriate-ciliolate margin. In none of the tropical and subtropical American material do the achenes show beyond the scales; the scales strongly cover them and are nearly twice as long. The perianth consists of very delicate bristles remotely retrorse-setulose chiefly above the basal third and commonly overtopping the achene. The connective of the anther (FIGS. 2 and 3) projects as a triangular-ovate sessile tip, though sometimes becoming elongate. North of tropical America true *S. validus* is frequent or common in Florida and there is material in the Gray Herbarium with the stereotyped and possibly too inclusive label "Santee Canal, South Carolina, *Ravenel*".

From genuine tropical and subtropical *Scirpus validus* our var. *creber* differs in its often more lax inflorescence (FIGS. 4 and 5), the backs of the scales glabrous, the scales barely covering or when they are ripe (FIG. 5) not wholly covering the achenes; the perianth (FIG. 7) of usually coarser and rather shorter bristles which are copiously retrorse-setose; and the anther (FIG. 6) with the slender tip becoming prolonged. Some material from the southeastern states and some from Bermuda is so transitional

¹ The citation by Beetle in Am. Journ. Bot. xxviii. 695 (1941) of Bermuda, Haiti, Porto Rico, Jamaica and Cuba as the "EAST INDIES" and his statement of broad range (p. 693), "common throughout North America, and bordering the Pacific basin", with the only South American specimens cited coming from Uruguay and Argentina, suggest need of more precise knowledge of geography.

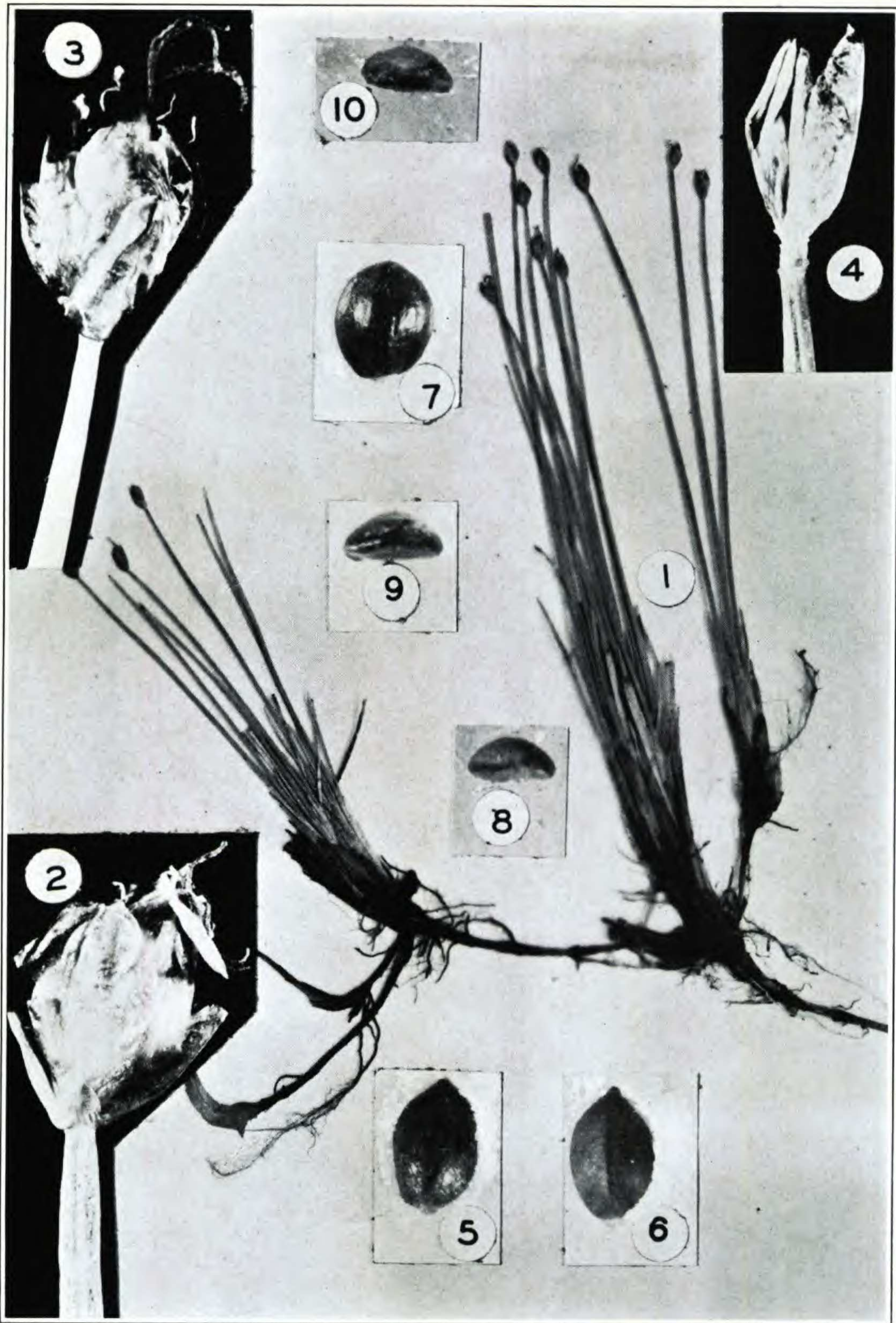


Photo. B. G. Schubert.

SCIRPUS ROLLANDII: FIG. 1, type, $\times 1$; FIGS. 2 and 3, spikelets of type, $\times 10$; FIG. 4, disintegrated spikelet from type, showing anthers, $\times 10$; FIGS. 5-8, achenes, $\times 10$; FIGS. 8-10, looking down upon summits of achenes, showing plano-convex outline, $\times 10$.



Photo. B. G. Schubert.

SCIRPUS VALIDUS: FIG. 1, inflorescence, $\times 1$; FIG. 2, spikelet, $\times 5$; FIG. 3, achene and elongate bristles, $\times 10$.

Var. CREBER: FIG. 4, inflorescence of type, $\times 1$; FIG. 5, mature spikelets, showing protruding achenes, $\times 5$; FIG. 6, flowering spikelets, $\times 5$; FIG. 7, achene and subequal bristles, $\times 10$.

Var. CREBER, FORMA MEGASTACHYUS: FIG. 8, inflorescence of type, $\times 1$.

that I am treating the common plant of the United States and Canada as a strong geographic variety, rather than as a species. In its prolonged and linear-cylindric spikelets up to 1.5 cm. long var. *creber*, forma *megastachyus* (FIG. 8), when its inflorescence is contracted, might be mistaken for *S. acutus*. In fact, by the recently published key to species of this section (“Spikelets ovoid . . . *S. validus*”; “Spikelets subcylindric . . . *S. acutus*”¹ and the accompanying descriptions (“spikelets 5–10 mm. long, . . . ovate” for *S. validus*; “spikelets 0.7–2 cm. long, . . . ovate-acute to cylindrical” for *S. acutus*) one could hardly place most specimens under *S. validus*; nevertheless several specimens, including the type, of forma *megastachyus* were cited as good *S. validus*. Accompanying the elongation of spikelet the achene of forma *megastachyus* is enlarged, achenes from the form running considerably larger than in typical var. *creber*.

In connection with *Scirpus validus*, var. *creber* two names have to be considered, because they are cited by Beetle as synonyms under his all-inclusive *S. validus*. These are *S. orgyalis* Raf. Annals of Nature [not “Amer. Nat.” as cited in the recent paper], 16 (1820) and *S. lacustris*, var. *condensatus* Peck, N. Y. State Mus. Rep. no. 53: 853 (1900). Rafinesque’s *S. orgyalis* of “creeks and rivers of New York and Pennsylvania”, had little of specific character in the brief description except “spikes lateral under the apex, glomerated, ovate, sub-sessile; scales ovate, mucronate, brown, arachnoidal”. What he had we do not know. He intended his name to apply to anything North American of the *lacustris* group. The “glomerate . . . sub-sessile” spikes with “arachnoidal” scales could as well, if not better, apply to *S. acutus* Muhl. (1842) which occurs in New York and western Pennsylvania and which often has villous scales, while those of the *S. validus* of that region have the scales glabrous except for keel and margin.

Peck was not differentiating between the three species of § *Lacustris* which occur in New York State. His “***S. lacustris condensatus*** n. var.” was described: “Heads of the panicles sessile or on very short pedicels, forming a dense cluster about 1 inch long and broad. Otherwise as in the common form. Lime

¹ Beetle, l. c. 692 (1941).

Lake. August. F. E. Fenno." According to House, N. Y. State Mus. Bull. no. 254: 147 (1924) the Fenno plant is *S. heterochaetus*, a species which usually has a lax and open panicle and which differs from *S. validus* in its very pale and solitary spikelets, its trigonous achene, etc. Even if *S. lacustris condensatus* were an unusual form of *S. validus* it would be quite ridiculous to take up the name, intended for a trivial form, for the transcontinental plant with open and loosely forking panicles. Extreme literalists might do so, but the intent of the original author was obvious; the rules of nomenclature were not intended to foster absurdity, if they do, it is time to change them.

S. Steinmetzii, sp. nov. (TAB. 766, FIG. 1-7). Planta statura habituque ut in *Scirpo heterochaeto*; spiculis ellipsoideo-ovoideis obtusis 5-7.5 mm. longis 4-5 mm. crassis fulvis; squamis scarioso-membranaceis fulvis acuminatis glabris, margine apiceque villosa-ciliatis, aristo breve; antheris apice triangulari-ovatis; stylo 2-partito; achaeniis plano-convexis albescentibus elliptico-obovatis vel subrotundatis 2.5-2.8 mm. longis; setis 1 vel 2 vel 0 tenuissimis brevibus.—MAINE: bank and shore of sluggish stream, Passadumkeag Stream, Passadumkeag, Penobscot County, August 12, 1937, *F. H. Steinmetz*, no. 355 (TYPE in Herb. Gray.; ISOTYPE in Herb. Univ. of Maine), September 1, 1938, *Steinmetz*, July 29, 1942, *Steinmetz & Gashweiler*, specimens originally and tentatively placed with *S. heterochaetus* Chase; shallow water near shore of river, Passadumkeag River at Hathaway Bridge, Passadumkeag, August 5, 1940, *Ogden & Wright*, no. 2345.

Scirpus Steinmetzii, with which it is a great pleasure to associate the name of the leader of botanical exploration in Maine and discoverer of the plant, is like *S. heterochaetus* only in having a prolonged basal leaf and in its lax inflorescence with no tendency to the formation of glomerules. *S. heterochaetus* has slender pale green to whitish-brown lanceolate to slenderly ellipsoid acute or subacuminate spikelets 0.75-2.3 cm. long; its pale scales are firm to subcoriaceous and deeply emarginate at tip; its styles mostly 3-cleft, its achenes trigonous. It is a species of calcareous or alkaline waters; and it was beautifully illustrated by Mrs. Chase when she published it in RHODORA, vi. 70, t. 53, fig. *d* (1904). *S. Steinmetzii*, on the other hand, has the reddish to purple-brown plump-ovoid obtuse spikelets only 5-7.5 mm. long; the thin and almost scarious scales tapering to the awn

(not deeply emarginate) and heavily villous-ciliate (rather than slightly or hardly so) at margin; the style is 2-cleft and the strongly flattened achene plano-convex, merely slightly convex on the back. It should, therefore, be confidently watched for in the extensive lake-strewn area which extends from the Penobscot across Hancock and Washington Counties, Maine, into southwestern New Brunswick.

From *Scirpus validus*, var. *creber* the newly described *S. Steinmetzii* is distinguished by its non-glomerulate spikelets, the scales greatly overtopping the achenes (as in tropical *S. validus*), but with tapering (rather than broadly rounded and emarginate) tip, the anther-connective with a triangular sessile terminal appendage, the bristles fewer and short or wanting, and the persistent old filaments very broad and ribbon-like.

In PLATE 765, FIGS. 1-3 are of typical *SCIRPUS VALIDUS* from Cordillera Septentrional, prov. Puerto Plata, Sabaneta, in Caño Hondo, Civ. Santo Domingo, Hispaniola, *Ekman*, no. 14,549: FIG. 1, inflorescence, $\times 1$; FIG. 2, spikelet, showing blunt anther, $\times 5$; FIG. 3, achene, showing elongate bristles and an anther, $\times 10$. FIGS. 4-7, var. *CREBER*: FIG. 4, inflorescence of TYPE, $\times 1$; FIG. 5, mature spikelets, showing protruding achenes, $\times 5$, from Litchfield, New York, *Haberer*, no. 2228; FIG. 6, flowering spikelets, showing apiculate anthers, $\times 5$, from Dixville Notch, New Hampshire, July 27, 1895, *E. F. Williams*; FIG. 7, achene, showing bristles, from TYPE, $\times 10$. FIG. 8, inflorescence of TYPE of var. *CREBER*, forma *MEGASTACHYUS*, $\times 1$.

In PLATE 766 FIGS. 1-7 are of *SCIRPUS STEINMETZII*, all from the TYPE series: fig. 1, inflorescences, $\times 1$; FIG. 2, axis of inflorescence, $\times 3$; FIGS. 3 and 4, spikelets, showing long scales and blunt anthers, $\times 5$; FIGS. 5 and 6, achenes, with single perianth-bristle and broad filaments, $\times 10$; FIG. 7, achene viewed from above (looking down on beak), $\times 10$. FIGS. 8-10, *S. HETEROCHAETUS*, from Selkirk, Oswego County, New York, *Fernald, Wiegand & Eames*, no. 14,192: FIG. 8, spikelets, $\times 5$; FIG. 9, achene, $\times 10$; FIG. 10, achene, viewed from above, $\times 10$.

SOME AMERICAN SPECIES AND VARIETIES OF *SCIRPUS* (PLATES 763, figs. 6 and 7, and 767).—*SCIRPUS RUFUS* (Huds.) Schrad., var. **neogaeus**, var. nov. (TAB. 763, FIG. 7), *achaeniis fusiformilanceolatis* 4.5-5.5 mm. longis 1-1.7 mm. latis valde stipitatis rostratisque.—Saline to brackish, rarely fresh marshes, Newfoundland and shores of Gulf of and lower River St. Lawrence, Quebec, south to southwestern Nova Scotia and southwestern New Brunswick; salt marshes from Churchill to Red Deer River, lat. 53°, Manitoba. TYPE: near Hospital Point, Grindstone Island, Magdalen Islands, July 18, 1912, *Fernald, Bartram, Long and St. John*, no. 6968 (in Herb. Gray.).

In habit, foliage, spikes and spikelets the American material of *Scirpus rufus* (*Blysmus rufus* (Huds.) Link) is quite like the plant of northern Europe and it shows the same diversity of

involucre, oftenest with it essentially obsolete or reduced to a short blade but occasionally with a long blade overtopping the compound spike. The European descriptions very generally define the achene as elliptic and of a yellow-gray color. There being no reason in European works for further detail the size is not often given. Holmberg, however, in his very detailed and unfortunately never completed *Scandnaviens Flora*, Häfte 2: 304 (1926) says "*Nöt* spolformigt [fusiform] elliptick . . . 3 mm. läng, 1,5 mm. bred, gul-1. brungrå." The achenes of the European plant (PLATE 763, FIG. 6) range from 3–4.5 mm. long, with the rather definitely elliptic body usually about 3 mm. long and 1.5–2 mm. broad and opaque to barely sublustrous. The achene of the American plant is more definitely fusiform, 4.5–5.5 mm. long, lustrous and of slightly warmer color, the body only 1–1.7 mm. broad, the stipe and beak more prolonged than in the European plant. FIG. 6 shows achenes, $\times 5$, of typical *S. rufus* from Skåne, Sweden, July 14, 1928, *Erik Asplund*; FIG. 7, achenes, $\times 5$, from the TYPE of var. *neogaeus*.

S. SUBTERMINALIS Torr., forma **terrestris** (Paine), comb. nov. Var. *terrestris* Paine, Cat. Pl. Oneida Co., 96 (1865).

S. MARITIMUS L., var. **FERNALDI** (Bicknell) Beetle, forma **agonus**, culmis ad 1.5 m. altis et 1.3 cm. crassis; foliis ad 15 mm. latis; spiculis 1.2–4 cm. longis; achaeniis late vel subrotundo-obovatis ad basin sensim rotundatis plerumque 2.5–3.2 mm. latis plano-convexis vel lenticularibus dorso sensim rotundatis.—Saline or brackish marshes and fresh tidal shores, Cape Breton, Magdalen Islands, Prince Edward Island and eastern New Brunswick, south to Connecticut. The following belong here. QUEBEC: shallow water near margins of brackish ponds southwest of Étang du Nord village, Grindstone Island, Magdalen Islands, *Fernald, Long & St. John*, no. 6986. PRINCE EDWARD ISLAND: border of salt marsh, Mt. Stewart, *Fernald, Bartram, Long & St. John*, no. 6980; salt marsh, Bunbury, *Fernald, Long & St. John*, no. 6987. NOVA SCOTIA: salt marsh at head of Baddeck Bay, Victoria Co., *Fernald & Long*, no. 20,215; edge of brackish marsh, Sable Island, *St. John*, no. 1160; near brackish mouth of Salmon River, Truro, *Fernald & Wiegand*, nos. 4248 and 4249; border of salt marsh, Jordan Falls, Shelburne County, September 4, 1921, *Fernald & Long*, no. 23,398 (TYPE in Gray Herb., distrib. as *S. campestris*, var. *novae-angliae*). NEW BRUNSWICK: brackish marsh, Bathurst Bay, Bathurst, *S. F. Blake*, no. 5457; marsh, Bay du Vin Island, Northumberland County, *Blake*, nos. 5706 and 5707; border of brackish pond,



Photo. B. G. Schubert.

SCIRPUS STEINMETZII, all figs. from type: FIG. 1, inflorescences, $\times 1$; FIG. 2, axis of inflorescence, $\times 3$; FIGS. 3 and 4, spikelets, $\times 5$; FIGS. 5 and 6, achenes, each with single bristle, $\times 10$; FIG. 7, achene viewed from above, $\times 10$.

S. HETEROCHAETUS: FIG. 8, spikelets, $\times 5$; FIG. 9, achene, $\times 10$; FIG. 10, achenes viewed from above, $\times 10$.



Photo. B. G. Schubert.

SCIRPUS EXPANSUS, all figs. from type: FIG. 1, inflorescence, $\times \frac{2}{5}$; FIG. 2, portion of inflorescence, $\times 3$; FIG. 3, spikelets, with anthers, $\times 10$.

S. SYLVATICUS: FIG. 4, small portion of inflorescence, $\times 3$; FIG. 5, spikelets, with anthers, $\times 10$.

Whale Cove, Grand Manan Island, *C. A. & Una F. Weatherby*, no. 5609. MAINE: salt marsh toward Dennisville, Pembroke, *Fernald*, no. 1414; brackish shores, Pleasant River, Columbia Falls, *Svenson & Fassett*, no. 1005; muddy shore of Herrick's Bay, Flye's Point, Brooklin, *A. F. Hill*, no. 1345; fresh or slightly brackish border of salt marsh, South Thomaston, *Bissell, Fernald & Chamberlain*, no. 8933; wet rocky shore, Matinicus, July 19, 1919, *C. A. E. Long*; sandy salt marsh, Bristol, *E. B. Chamberlain*, no. 695, *Dinsmore & Chamberlain*, no. 839; salt marsh, Bath, August 23, 1911, *Bissell*; Foster's Point, West Bath, 1892, *Kate Furbish*; salt marsh, Hardings', Brunswick, September 13, 1891, *Kate Furbish*, September 27, 1898, *Chamberlain*, no. 936; Kennebunkport, August 7, 1888, *Kennedy*; mouth of York River, York, *Bicknell*, no. 1156, *Fernald & Long*, no. 12,845. NEW HAMPSHIRE: ditch near border of salt marsh, Hampton Falls, August, 1898, *A. A. Eaton*. MASSACHUSETTS: Manchester, *H. D. Thoreau*; salt marsh, West Manchester, *F. T. Hubbard*, no. 73; Somerville, 1882, *C. E. Perkins*; Watertown, July 17, 1880, *C. E. Perkins*; salt marsh, Scituate, September 8, 1901, *W. P. Rich*, September 13, 1914, *C. H. Knowlton*; swale, West Barnstable, *St. John & White*, no. 941. CONNECTICUT: salt marsh, Milford, *E. H. Eames*, no. 39.

Scirpus maritimus, var. *Fernaldi*, forma *agonus*, is the eastern North American plant treated by Beetle in *Am. Journ. Bot.* xxix. 84, 85 (1942) as typical *S. maritimus* of Europe. It is quite like *S. maritimus*, var. *Fernaldi* (*Bicknell*) Beetle, l. c. 85, except in having bifid styles and thin plano-convex to lenticular achenes. Throughout the range of var. *Fernaldi*, with trigonous achenes, and its forma *agonus* the two show the same range of variation in spikelets and habit, with a dense glomerule or more commonly with well developed rays, with the latter terminated by single to several and glomerulate spikelets, with the spikelets short and ovoid as in the type of *S. Fernaldi* *Bickn.* or slender and lance-cylindric, running up to 4 cm. or more long, as in the type of *S. novae-angliae* *Britton*. Both *S. Fernaldi* and *S. novae-angliae* were based upon specimens with trigonous achenes; and in that series as well as in the one with plano-convex or lenticular and relatively thin achenes there is no line of demarcation evident by which the plants with ovoid and lance-cylindric spikelets can be separated. *S. novae-angliae* was published as a species in 1898, *S. Fernaldi* in 1901. In the varietal rank they are of identical date, published in *RHODORA*, viii. 163 (1906) as *S.*

campestris, var. *novae-angliae* (Britton) Fern. and var. *Fernaldi* (Bicknell) Bartlett, but since the latter was transferred to *S. maritimus* as var. *Fernaldi* while Beetle considered *S. novae-angliae* to be a variety of *S. robustus* Pursh, *S. robustus*, var. *novae-angliae* (Britton) Beetle, l. c. 87 (1942), they are again of even date. Under these circumstances it seems less disturbing to maintain under *S. maritimus* the first of the two which was treated as a variety of that species.

It is not clear to me why Beetle places *Scirpus novae-angliae* under *S. robustus*. The latter species is a beautifully distinct one of tropical America, following the Atlantic coast northward to Massachusetts, the Pacific to California. Its plump ellipsoid-ovoid to thick-cylindric blunt or bluntish spikelets are rufescent or fulvous, the scales (especially the outer) with very prolonged awns. Its leaf-sheaths have very characteristic orifices, the strong ribs running up the summit to the semicircular or prominently convex dark scarious ligule. *S. novae-angliae*, on the other hand, like European *S. maritimus* and American *S. Fernaldi*, has the ligule V-shaped, with truncate or concave (rarely low-convex) summit and the nerves at the summit of the sheath are slender and relatively inconspicuous. The ovoid to lance-cylindric acute to acuminate spikelets are, as in *S. maritimus*, castaneous to fuscous or blackish, and the awns of the scales are relatively short.

From typical European *Scirpus maritimus*, our var. *Fernaldi* is distinguished merely on size, the leaves running higher on the culm, and upon a slight difference in shape of achene. Our plant is usually taller and coarser, with leaves mostly 6–15 mm. broad (as opposed to the “ ± 4 (7)” — *Hegi*, of the European); the spikelets of ours are 1.2–4 cm. long (“bis 2 cm. lang” in *S. maritimus* — *Hegi*); and the achenes are generally more broadly obovate and more gradually rounded to the broad base, as opposed to the narrower-obovate achene of *S. maritimus* in which they taper more cuneately or even with a slight concave curve to the slender base.

I do not know how Beetle arrived at the conclusion that true (Eurasian) *Scirpus maritimus* has “Style normally 2-fid” (Beetle, l. c. 87), for the consensus of statements of European taxonomists makes the 2-fid style very exceptional: “a t y p i c u s

. . . Narben 3"—*Ascherson & Graebner*; "Stigmates 3 (rar^t 2 . . .)" —*Rouy*; "Stigmas 3, or rarely 2"—*Babington*; "Style 3-cleft"—*Bentham*; "Narben 3, seltener 2"—*Hegi*. Although true *S. maritimus* (with 3 stigmas and trigonous achenes) is in Europe the common form, while the so-called var. *digynus* (Simonk.) Godr. is there called rare, with us typical var. *Fernaldi* (with trigonous achenes) and its forma *agonus* are about equally common. At least, in the area from the Gulf of St. Lawrence to Connecticut, where the two somewhat alternate their colonies, the representation before me shows 51 sheets of typical var. *Fernaldi* (including *S. novae-angliae*) and 58 of forma *agonus*. Within this area the two are about equally common; from New York to Virginia the representation before me is all of typical var. *Fernaldi*.

S. PALUDOSUS Nels., var. **atlanticus**, var. nov., a forma typica recedit foliis caulinis plerumque 2–4, sub medio gestis, vaginae venis apice tenuibus vix prominulis; spiculis brunneo-castaneis vel fusco-nigrescentibus; antheris plerumque 2–3.5 mm. longis, filamentis inclusis vel subexsertis; achaeniis rotundo-obovatis vel suborbicularibus rariter cuneatis olivaceis vel atro-brunneis.—Salt marshes and saline shores, Gulf of and lower River St. Lawrence, Quebec, to northern New Jersey; central and western New York. TYPE: salt marsh, Bunbury, Prince Edward Island, August 28, 1912, *Fernald, Long & St. John*, no. 6982 (in Herb. Gray.).

Scirpus paludosus Nels. in Bull. Torr. Bot. Cl. xxvi. 5 (1899), like the identical *S. campestris* Britton in Britt. & Brown, Ill. Fl. i. 267, fig. 626 (1896), not Roth (1795), is the plant of western North America, extending eastward to Manitoba, Minnesota, Nebraska and Missouri. Var. *atlanticus* is the plant of the Atlantic coast, with an isolated and in some ways transitional area in the saline region of interior New York. True *S. paludosus* is a very pale green plant, with culms mostly 0.5–2 cm. thick at base and 0.5–1.5 m. high; the cauline leaves mostly 3–5 (–6), with sheaths ascending well above the middle of the culm (but in starved colonies the culms lower and the leaves fewer and borne chiefly below the middle), their blades mostly 0.5–1.5 cm. broad, the veins near the orifice of the sheath prominent and usually thickened; spikelets whitish-brown to drab or pale brown; anthers 3.5–5 mm. long, standing well out of the spike-

lets on elongate filaments, the filaments, after falling of anthers, usually showing above the scales and twice to thrice the length of the achene; achene cuneate-obovate, rarely roundish, pale brown to olivaceous.

S. paludosus, var. *atlanticus* is not so pale; its culms are 1.5–7.5 dm. high, 2–8 mm. thick at base; the cauline leaves are usually 2–4 and borne chiefly below the middle (though in exceptional plants, perhaps mixed with *S. maritimus*, var. *Fernaldi*, more numerous and running high on the culm), the blades 1.5–9 mm. broad, the veins near summit of sheath delicate and inconspicuous; spikelets chestnut-brown to blackish-fuscous; anthers 2–3.5 mm. long, mostly not exceeding scales, the old filaments rarely exerted and shorter than to about twice the length of the achene; the achene rounded-obovate to suborbicular, only exceptionally cuneate, olivaceous to deep brown. In central and western New York the plant geographically somewhat intermediate between true *S. paludosus* and var. *atlanticus* has the anthers up to 4 mm. long and the achene often cuneate at base. Along the coast of the Gulf of St. Lawrence and of the Atlantic occasional colonies seem like hybrids of *S. paludosus*, var. *atlanticus* and *S. maritimus*, var. *Fernaldi*.

True western *Scirpus paludosus* has an evident tendency to branching of the inflorescence; var. *atlanticus* not. Of the 186 inflorescences of *S. paludosus* before me 124 have simple or at least closely crowded glomerules, 62 (33%) have 1 or 2 (rarely 3 or 4) obvious elongate rays. Of 420 inflorescences of var. *atlanticus* only 20 (less than 4%) show a single (in 1 case 2) short ray. On the Atlantic coast the plant with fuscous spikelets frequently on definite or elongate rays is *S. maritimus*, var. *Fernaldi*. Of the 210 inflorescences of it before me 172 (nearly 82%) have definite (sometimes forking) rays (26 with 1 ray, 77 with 2, 28 with 3, 20 with 4, 13 with 5, 13 with 6, 6 with 7, 5 with 8, 1 with 11, 1 with 12 and 4 with 13).

Although Beetle in *Am. Journ. Bot.* xxix. 83 (1942) cites *Scirpus paludosus* as occurring in the "EAST INDIES: *Ekman 1325*" (this citation placed between New Jersey and Minnesota), there is grave doubt about it. I have not seen no. 1325 and can, consequently, not check its identity; at least, it presumably came from the *West Indies*.

S. expansus, sp. nov. (TAB. 767, FIG. 1-3), planta habitu *S. sylvatici*; culmo 0.5-1.6 m. alto ad basin 0.6-1.5 cm. crasso superne scabro; foliis 1-2.5 cm. latis, vaginis coriaceis valde septato-nodulosis; involucri foliis 3-8, imis panicula superantibus; panicula 1-3 dm. alta radiis adscendentibus vel divaricatis; pedicellis valde pilosis; spiculis 3-5 mm. longis, plerumque glomerulatis; squamis valde carinatis apice subulatis; antheris 1.3-1.6 mm. longis.—Spring-heads, borders of rills, springy meadows, swales, etc., southwestern Maine to southern Michigan, south to Georgia. The following, selected from a large series, are representative. MAINE: South Poland, 1895, *Kate Furbish*; *Typha* swamp, bank, Presumpscot River, August 13, 1903, *Collins & Chamberlain*, no. 614 (TYPE in Herb. Gray.); springy spot, Great Chebeague Island, *Fernald*, no. 1401; swale at border of salt marsh, Wells, *Fernald & Long*, no. 12,851; swamp, York Harbor, July 22, 1901, *F. T. Hubbard*. NEW HAMPSHIRE: Hanover, August, 1878, *Jesup*; Ore Hill, Warren, July 26, 1910, *E. F. Williams*; shore of Johnson Creek, Madbury, *Hodgdon*, no. 2629. VERMONT: Gulf Brook swamp, Townshend, September 10, 1912, *L. A. Wheeler*. MASSACHUSETTS: south end of Horn Pond, Woburn, August 4, 1869, *Wm. Boott*; South Sudbury, June 17, 1902, *Rich, Fernald & Williams*; Westfield, July 10, 1860, *Wm. Boott*; brook in cold bog, Shirley, August 27, 1916, *Churchill*; brooksides, Uxbridge, June 23, 1876, *Morong*; shore of small pond, Granville, *F. C. Seymour*, no. 388; New Salem, July 28, 1931, *Goodale, Potshay & St. John*; brookside, New Marlboro, August 30, 1902, *Ralph Hoffmann*. CONNECTICUT: West Hartford, July 13, 1901, *H. J. Koehler*; swamp, Southington, *Bissell*, no. 722; New Hartford, August 10, 1883, *Chas. Wright*; along Steele Brook, Waterbury, *Blewitt*, no. 456; open swamp, Milford, *E. H. Eames*, no. 4000. NEW YORK: wet ditch, Fort Anne, Washington County, *Burnham*, no. 46; along a cold stream, 4 miles south of Utica, *Haberer*, no. 1184; Waterville, Oneida County, August 18, 1917, *House*. NEW JERSEY: Rosenkraus Run, Sussex County, August 11, 1917, *E. B. Bartram*. PENNSYLVANIA: open marshy, springy swale, Lehigh Gap Station, *Pretz*, no. 13,253; roadside ditch, 2 miles north of Sadsburyville, Chester County, June 29, 1924, *H. E. Stone*; Big Meadow Run, Farmington, Fayette County, June 4, 1931, *Core*. DELAWARE: along brooks, Centreville, August, 1869, *Commons*. DISTRICT OF COLUMBIA: Washington, 1881 ("the most southern locality known"), *Scribner*. VIRGINIA: South Fork of Holston River, St. Clair's Bottom, Smyth County, July 30, 1892, *Small*. NORTH CAROLINA: near Hickory, Catawba County, *Heller*, no. 274. GEORGIA: in cool shaded brook at northern base of Stone Mountain, *Harper*, no. 205. MICHIGAN: swamp, Grand Rapids, July 20, 1900, *Emma J. Cole*.

Scirpus expansus is the plant which regularly passes in the eastern United States as *S. sylvaticus* L. of Eurasia. The resemblance is merely superficial, for in most characters there are clear distinctions. *S. sylvaticus* has thinner leaves, with scarious sheaths, the summit of the inner band easily friable, the blades 6–14 mm. wide; in *S. expansus* the hard and thickish blades are 1–2.5 cm. broad, the coriaceous sheaths strongly septate-nodulose (in *S. sylvaticus* only faintly, if at all, so), the summit of the inner band firmer. In *S. sylvaticus* the relatively slender culm is smooth to summit; in *S. expansus* the usually coarser culm is scabrous at summit (for 1–5 cm.). In *S. sylvaticus* the longest smooth and thin leaf of the involucre is 0.7–2 dm. long, only rarely exceeding the panicle; in *S. expansus* it is firm and harshly scabrous beneath and 1.5–3 dm. long, often overtopping the panicle. In *S. sylvaticus* the mature panicle is lax, with loosely spreading to recurving longer rays, the panicle 1–2 dm. high; in *S. expansus* the longer rays (FIG. 4) are more stiffly ascending to divergent, only the short basal ones much recurving, and the panicle, when well developed, is 1.5–3 dm. high. In *S. sylvaticus* the spikelets (FIGS. 4 and 5) are 3–4 mm. long and in glomerules of 2–5, the ultimate lateral pedicels often terminated by single spikelets; in *S. expansus* the principal glomerules have 3–12 (rarely to 40) spikelets 3–5 mm. long, only a rare ultimate pedicel with a solitary one. In *S. sylvaticus* the pedicels are minutely scabridulous; in *S. expansus* closely pilose. In *S. sylvaticus* the scales of the spikelet (FIG. 5) are blunt or barely mucronate by the extension of the relatively weak midrib; in *S. expansus* they (FIG. 3) have subulate-acuminate tips, through the extension of the very prominent keel-like midrib. In *S. sylvaticus* the anthers (FIG. 5) are 0.7–1 mm. long; in *S. expansus* (FIG. 3) 1.3–1.6 mm. long.

Forma **Bissellii** (Fernald), comb. nov. *S. sylvaticus*, var. *Bissellii* Fernald in RHODORA, ii. 21 (1905); *S. microcarpus*, var. *Bissellii* (Fern.) House in Bull. N. Y. State Mus. nos. 243–244: 18 (1923). *S. sylvaticus*, forma *Bissellii* (Fern.) Carpenter in Dole, Fl. Vt. ed. 3: 76 (1937).

Forma **globulosus**, f. nov., glomerulis globosis 7–12 mm. diametro, spiculis 20–60 congestis valde imbricatis 3–4 mm. longis.—NEW YORK: Lyon's Falls, Lewis County, August, 1882, J. V. Haberer. (TYPE in Herb. Gray.).

A very unusual extreme, the inflorescence, with large globose heads of very numerous spikelets superficially suggesting the most extreme *Juncus canadensis* J. Gay. Not to be confused with forma *Bissellii*. That has the large glomerules 1–2 cm. in diameter and composed of loosely divergent linear-cylindric spikelets 6–14 mm. long.

Since some botanists place *Scirpus expansus* under the western North American *S. microcarpus* Presl, it is well to point out that *S. microcarpus* has 2 stigmas and lenticular achenes; *S. expansus* 3 stigmas and trigonous achenes. In *S. microcarpus* the smooth or nearly smooth leaf-sheaths and the leaf-blades are thinner and smoother than in *S. expansus*, the involucre only slightly if at all exceeding the inflorescence; as contrasted with the heavier and septate-nodulose sheaths of *S. expansus*, the broader and firmer blades scabrous beneath and the usually longer involucres. In its thin and relatively narrow leaves with smooth or nearly smooth sheaths *S. microcarpus* is more like *S. sylvaticus* of Eurasia. In the texture of its scales and the size of its panicle (0.8–2 dm., only exceptionally—3 dm. high) it is more like the latter, but the glomerules have many more and usually longer spikelets. Unless all members of the section are to be reduced to an all-inclusive *S. sylvaticus*, with several constant and geographically isolated subdivisions, some with 2 stigmas, others with 3, these fundamental characters of the pistil associated with other characters, the three North American members of the series, *S. microcarpus* Presl, *S. rubrotinctus* Fern. and *S. expansus* are well marked species.

IN PLATE 767, FIGS. 1–3 are of *SCIRPUS EXPANSUS*, from the TYPE: FIG. 1, inflorescence, $\times \frac{2}{5}$; FIG. 2, portion of inflorescence, to show characteristic ascending branches with spikelets mostly glomerulate, $\times 3$; FIG. 3, spikelet with anthers, $\times 10$. FIGS. 4 and 5, *S. SYLVATICUS* from Tassin, France, *Boulin*: FIG. 4, small portion of inflorescence to show characteristic divergent branching, with lateral spikelets often solitary, $\times 3$; FIG. 5, spikelets with anthers, $\times 10$.

S. RUBROTINCTUS Fern., forma **radiosus**, f. nov., spiculis lineari-cylindricis 7–13 mm. longis in glomerulis radiosus 1.5–2.3 cm. diametro aggregatis.—MAINE: tidal swales along Cathance River, Bowdoinham, September 14 and 19, 1926, *Fernald & Long*, nos. 12,853 (TYPE in Herb. Gray.), 12,854; ditch near wharf, Camden, August 11, 1902, *G. G. Kennedy*.

The counterpart in *Scirpus rubrotinctus* of *S. expansus*, forma *Bissellii*.

S. ATROVIRENS Muhl., var. *GEORGIANUS* (Harper) Fern., forma **cephalanthus**, f. nov., glomerulis dense confertis in capitulo 1.3–5 cm. diametro aggregatis. TYPE: river-thicket, Veazie, Maine, August 25, 1908, *Fernald* (in Herb. Gray.).

S. ATROVIRENS Muhl., var. *GEORGIANUS* (Harper) Fern., forma **angustispicatus**, f. nov., spiculis anguste cylindricis ad 1 cm. longis. TYPE: wet shore of Housatonic River, Newtown, Connecticut, August 17, 1928, *E. H. Eames*, no. 10,692 (in Herb. Gray.).

S. POLYPHYLLUS Vahl, forma **macrostachys** (Boeckl.), comb. nov. Var. *macrostachys* Boeckl. in *Linnaea*, xxxvi. 731 (1870).

VI. THE IDENTITY OF *SCLERIA SETACEA* OF POIRET

One of the most definite and easily recognized species of *Scleria* is the handsome and tall cespitose but lax plant with soft and almost wing-angled easily compressed culms up to 1 m. high; broad, lax leaves up to 8 mm. wide; long, drooping, filiform, lateral peduncles and loosely fastigate terminal panicles up to 4 cm. long; the globose and reticulate achenes with spirally arranged pits and pubescent surfaces, the hypogynium with 3 broad erect lobes. This relatively tall species occurs from warm-temperate eastern South America, the West Indies and Florida to eastern Texas and Mexico, north in the Atlantic States to Long Island, and locally in the interior to Indiana.

This is the handsome plant beautifully described as *S. laxa* by Torrey in *Ann. Lyc. N. Y.* iii. 376 (1836), Torrey's appropriate name unfortunately preempted by the Australian *S. laxa* R. Br. (1810). Somewhat earlier Muhlenberg had described the same plant from North Carolina as *S. reticularis* Muhl. *Descr. Gram.* 266 (1817), he mistaking it for *S. reticularis* Michx. (1803). This confusion was soon noted, however, and there resulted two names: *S. Muhlenbergii* Steud. *Nom. ed. 2*, ii. 543 (1841), based upon "*S. laxa*. Torr. (non R. Br.) *S. reticularis* Mhlbrg. Pursh. (non Michx.)"; and, a little later, *S. Torreyana* Walp. *Ann.* iii. 696 (1852), based on *S. laxa* Torr. Other but later names were given to the plant; *S. Muhlenbergii* Steud., however, being the earliest available one, we may in this note omit the others, especially since their exact identification is not now possible. For this tall plant with compressed-trigonous culms, broad and

flat leaves and terminal lax panicles up to 4 cm. high Core, in his *American Species of Scleria* in Brittonia, ii. 79 (1936), takes up *S. setacea* Poir. in Lam. Encyc. vii. 4 (1806); and others, as unwittingly as myself, have trustingly followed him.

The photograph of the type of *S. setacea* Poir., however, thoroughly agrees with the original description:

8. SCLÉRIE à feuilles sétacées. *Scleria setacea*.

Scleria culmo foliisque setaceis, glaberrimis; spicis axillaribus, minimis, longè pedunculatis; spiculis angustis, pedicellatis seu subsessilibus (N.)

Ses racines sont courtes, fibreuses, fasciculées: il s'en élève des tiges nombreuses . . . , haute de huit à dix pouces & plus, très-grêles, fines, sétacées, triangulaires . . .

De l'orifice de chaque gaine, même à partir de celles du bas, il sort un pédoncule droit, très-fin, long d'un pouce & plus, terminé par deux, trois, à peine quatre épillets pédicellés, quelquefois un ou deux sessiles, petites, étroits, ovales-oblongs, aigues, d'un roux-clair, munis de petites bractées courtes, sétacées, à peu près de la longueur de l'épillet.

Cette plante croît dans l'Amérique; elle e été recueillie par M. Ledru à Porto-Ricco (*V. s. in herb. Lam.*)

It is most difficult to imagine how *Scleria Muhlenbergii* could ever have been identified with *S. setacea*, described as having setaceous culms up to 10 inches high, setaceous leaves, small red spikes, etc., the photograph before me showing the terminal inflorescence to be compact and 6–8 mm. high. Search in West Indian *Scleria* shows nothing like it, *S. Brittonii* Core and *S. georgiana* Core both having elongate horizontal rhizomes and larger terminal inflorescences; but the slender and acuminate reddish spikelets and the dense non-rhizomatous base at once suggest *Rhynchospora*. Turning to that genus, the type of *Scleria setacea* Poir. is promptly matched, even to the short-peduncled inflorescences in the lower leaf-axils, by *R. SETACEA* (Berg.) Boeckl., based upon *Schoenus setaceus* Bergius (1772). The fact that Poirét, in 1806, used the same specific name was merely coincidence; but the fact that his *Scleria setacea* coincides with *Schoenus setaceus*, therefore with *Rhynchospora setacea*, removes that wholly misinterpreted name from the valid species of *Scleria*. The many North American, West Indian and South American specimens recently marked "*Scleria setacea* Poir.", should be changed to *S. MUHLENBERGII* Steud.